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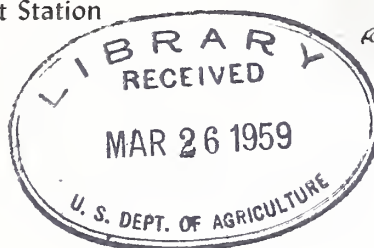
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NORTHEASTERN FOREST PEST REPORTER

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Northeastern Forest Experiment Station



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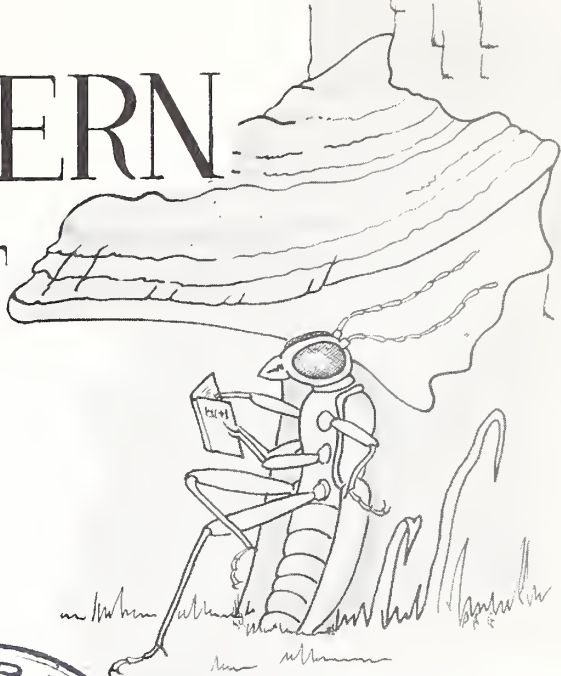
October 15, 1958

Weather conditions this year definitely favored tree growth in most parts of the region. Early and profuse foliage production enabled some species to "absorb" the insects with less damaging effects than usual. And early stripping of foliage was offset in many cases by ebullient refoleation.

FOREST INSECTS

SPRUCE BUDWORM (*Choristoneura funiferana*) An extensive egg mass survey in northern and eastern Maine indicated a definite dropoff in populations in Washington, Hancock, Penobscot, and southern Aroostook Counties, with low to negligible numbers predicted for 1959. In the Squapan and Portage Lake areas, egg mass counts revealed a continued high potential for next year. These areas and a 5- to 15-mile-wide band between them comprise the southwestern periphery of the 1958 control area. As parasitism of all budworm stages was relatively low this year and further spread might occur in 1959, the spraying of approximately 200,000 acres next June is under consideration.

BALSAM WOOLLY APHID (*Adelges piceae*) A statewide survey in Vermont by NEFES personnel and Ted Walker, Vermont Department of Forests and Parks, revealed a much greater acreage and volume of balsam fir killed by this pest than anticipated. No damage or current infestations were found north of Danville and the Lamoille River. But both tree mortality and heavy attack were observed throughout the remainder of the State. Stem attack predominates, and unless a good Fate intervenes (is this Science ?) extensive loss of the balsam fir can be expected. A gradual buildup of the aphid at locations in Hamilton County, New York, is reported.



This insect is a serious problem in the Penobscot Experimental Forest in Maine, where the infestation is apparently increasing after having already killed some fir. The long range compartment studies in this Forest can be affected significantly by the direct effects of the insect on growth and yield of balsam fir and by its less obvious effects on regeneration and composition.

WHITE-PINE WEEVIL (Pissodes strobi) Reported abundant in all states in the region -- apparently an upswing from the normally high incidence is in progress. It is becoming very noticeable at scattered locations in West Virginia, with red spruce apparently equally if not more favored than white pine.

PINE SAWFLIES (Neodiprion spp.) An interesting report from E.E. McCoy, Jr. of the New Jersey Plant Industry Laboratory indicates the excellent possibilities of a broad program of biological control of pine sawflies. The following is abstracted from his report.

Infestations of N. pratti paradoxicus covered approximately 1100 square miles in 1957 and 1630 square miles in 1958 in south-central New Jersey. Pitch pine is the primary host, although shortleaf has been attacked also. Laboratory and field tests showed that cocoons of this sawfly were readily attacked by the chalcid Dahlbominus fuscipennis, and releases of 1,007,000 Dahlbominus in 1957 and 600,000 in 1958 were made in the infested area by the N.J. Dept. of Agriculture. The parasite has been recovered in several check areas, but it is too early to evaluate this phase of the program. Other insect parasites, some in abundance, have been noted. Of these, Anthrax sinuosa, a fly, and Exenterus canadensis, a wasp, appear to be most important. These and several other parasites attack N. sertifer as well. The sawfly larvae and cocoons are further depleted by a motley assortment of spiders, stink bugs, yellow jackets, hornets, mice, and shrews. In the spring of 1958 the polyhedral virus disease of N. sertifer was tried against all larval stages of N. pratti paradoxicus. The mid-instar larvae were susceptible and spread of the disease was observed in field trials (note:- successful infection of N. pratti pratti larvae with N. sertifer virus has been accomplished by Dr. S. Dutky at Beltsville, Maryland.).

Arnold Drooz reports that in the N. sertifer infestation near Kunkletown, Pa., treated last May 13 with virus spray, virus-killed larvae were still stuck to the trees on August 5. He suggests that this is one possible means of re-infection the following year.

MISCELLANEOUS INSECTS ATTACKING CONIFERS Pine bark aphid (Pineus strobi) reported especially abundant in Maine, New York, and West Virginia; severe infestation on seedlings in nursery at Parsons, West Virginia. Pales weevil (Hylobius pales) causing local damage in most states. Black turpentine beetle (Dendroctonus terebrans) causing damage to residual trees in recently cut areas -- oil solution sprays of lindane will give some control. Larch sawfly (Pristiphora erichsonii) locally stripping trees at Sorrento, Maine. Yellow-headed spruce sawfly (Pikonema alaskensis) reported increasing in Maine. Bagworm (Thyridopteryx ephemeraeformis) injurious to red cedar and some pines in Delaware and Maryland, heavy locally on arborvitae in New York. Pitch pine near Rehoboth, Mass. showing yellowing due to the pine twig gall scale (Matsucoccus gallicola).

ORANGE-STRIPED OAK WORM (Anisota senatoria) This well-known pest has really made an appearance this year. It reaches the large and voracious larval stages late in the season, so its effects on hardwood hosts are not so spectacular as the appearance of the trees suggests. However, because of its abundance and wide distribution, it is of serious concern when in outbreak form. An airplane survey in Connecticut revealed heavy defoliation in the Connecticut River Valley and throughout the eastern part of the State -- the damage considered the worst on record. This general infestation extended into Rhode Island, where heavy feeding was reported locally over most of the State. The oak worm was reported abundant also in southern New Jersey; Montgomery County, Maryland; and near Pine Grove Furnace, Pennsylvania. Pupation occurred generally about the third week of September.

GYPSY MOTH (Porthetria dispar) A summary of gypsy moth activities submitted by Harry L. Smith, Regional Supervisor, Plant Pest Control Division, ARS, reads as follows:

The 1958 gypsy moth trapping program is approaching completion. Over 35,000 traps were used in Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Virginia, and West Virginia. In addition to the above, surveys were conducted in Canada and Michigan. Some traps are still in the field, therefore no complete summary can be given at this time. The following is the situation at present:

A selective survey using several hundred traps was conducted with negative results in Delaware, Maryland, Virginia, and West Virginia. There is no record of the gypsy moth ever having been found in any of these States. This survey was conducted with the active assistance of State and Federal Forestry and Park Service personnel as well as other Plant Pest Control cooperators.

Intensive trapping was conducted in about 15 counties in northeastern Pennsylvania, which includes the area on which eradication sprays were applied by the State-Federal cooperative control program in 1958. No male gypsy moths were caught or any other evidence of active infestation has been found to date.

The trapping program was also conducted covering the northern two-thirds of New Jersey; the suppressive area of New York, plus an additional zone to the west; and outside the regulated area in Maine. Final results are not available at this time. The trapping program was also conducted in Lansing, Michigan, as well as an area in Canada north of Lake Champlain.

Over 75,000 female gypsy moth abdominal tips were obtained in Connecticut and nearly 900,000 were obtained in Spain, which substantially increases our stock of gypsy moth sex attractant for the next few years. Although this improves the situation in this respect, we are still very much interested in obtaining information regarding sites from which pupae may be collected in 1959.

One of the largest experimental gypsy moth trapping programs ever conducted was carried on by the Pesticide Chemicals Research Section at Nashua, New Hampshire. One "synthetic" showed interesting results this season. Work of a preliminary nature was also conducted on developing a bio-assay method for screening possible synthetic attractants and also for using toxicants instead of tanglefoot in gypsy moth traps.

MAPLE LEAF CUTTER (Paraclemensia acerifoliella). Local infestations of this pest are still present in Vermont. This insect has a sequence of feeding habits which, though academically intriguing, presents a problem in control. The small larvae are at first leaf miners, and then they skeletonize, and finally cleanly chew characteristic holes and other interesting designs in the leaf as they become larger. In Lewis County, New York, several thousand acres of maple were severely defoliated.

VARIABLE OAK LEAF CATERPILLAR (Heterocampa mantee) Very abundant again this year in certain sections of Maryland and Delaware. Infestations in Maryland appeared to be most concentrated in Cecil County, with the most severe defoliation reported in the Port Deposit - Pricipio Furnace area. Larval feeding was completed in early August. Red, black, chestnut, and white oaks were attacked. Defoliation of white and water oaks was reported common in Kent and Sussex Counties, Delaware.

MISCELLANEOUS INSECTS ATTACKING HARDWOODS Fall webworm (Hyphantria cunea) abundant locally in most states. Yellow-necked caterpillar (Datana ministra) causing conspicuous defoliation of oaks throughout Delaware, and of linden in Newcastle County. Catalpa sphinx moth (Ceratomia catalpae) very heavy on catalpa in Kent and Sussex Counties, Delaware. The walnut caterpillar (Datana integerrima) reported heavy on black walnut in eastern and southern Pennsylvania and throughout Delaware. Damage by fall cankerworm (Alsophila pometaria) and spring cankerworm (Paleacrita vernata) in northern New Jersey was nil for the second year in a row -- a record. White-marked tussock moth (Hemerocampa leucostigma) common on sycamore and elm in Delaware. The looper, (Phigalia titea) severely defoliated about 2500 acres again in Hardy County, West Virginia -- considerable insect mortality due to predators and parasites. A heavy infestation of the chain-spotted geometer (Cingilia catenaria) covered 75 acres in Essex County, New York -- tree hosts, gray birch and black oak. The green-striped maple worm (Anisota rubicunda) reported causing heavy defoliation of sugar and red maples near Tamworth, New Hampshire. The gregarious oak leaf miner (Cameraria hamadryadella) very abundant in portions of Connecticut and Massachusetts. The poplar leaf roller (Archips conflictana) caused noticeable defoliation around Jackman, Maine -- pupal cases abundant in late July. Walking sticks were reported numerous in forest trees in Tioga County, Pennsylvania -- these can be very serious.

General Notes of Interest

H. A. Jaynes retired from the Federal Service on August 31 after more than 36 years as a research entomologist. Stationed at the Forest Insect Laboratory in New Haven since 1946, Hal's latest studies were on the biology and ecology of the spruce budworm and white-pine weevil. His chief project now will be growing more and larger apples at his orchard in Mt. Carmel, Connecticut.

FOREST DISEASES

Three classes of diseases figure prominently in this issue of the REPORTER, viz., Foliage Diseases, Wilts, and Miscellaneous Troubles and Disease Complexes. Foliage diseases were expected to be prominent, for weather conditions were frequently ideal for many of them. They were favored by frequent, well-distributed rains, as were many of the rusts, especially when prolonged wet periods coincided with sporulation periods. That wilts should be prominent is somewhat unexpected, for they usually are less conspicuous during periods of abundant moisture supply. Last year's drought undoubtedly enters this picture. Root mortality was probably much greater than generally realized, for the wilts, leaf scorchs, and the miscellaneous troubles and disease complexes are difficult to explain in any other way.

FOLIAGE DISEASES

Anthracnoses. Massachusetts reports receiving many species of plants infected by Gloeosporium spp., including apple, magnolia, Russian olive, red maple, white oak, and elm. Pennsylvania reports Gloeosporium apocryptum cultured from maple leaves; also that hickory was heavily infected with Gnomonia caryae; white oaks as losing much leaf surface from Gnomonia veneta, and that sycamores had recovered fairly well from early season infections by the same organism. Pennsylvania also reports receiving many inquiries on the sycamore disease during August and September, even though trees made good recovery in most cases. New Jersey also reports good recovery of native sycamores and London planes following early season infection causing defoliation and twig blighting to a degree unseen in the previous 10 years. Anthracnose was common on oak in West Virginia.

Leaf Spots. New Hampshire reports tar spot (Rhytisma acerinum) from red maples and R. punctatum from striped maple, although neither species was found on sugar maple. Gymnosporangium spp. causing leaf spots was common on deciduous hosts in Maine, as was also reported from New Hampshire. Entomosporium leaf spot is causing defoliation of hawthorns in scattered localities of Massachusetts. Maine reports it as heavy on ornamental hawthorns. It is listed in Station Paper No. 110 as occurring on hawthorns in New York State. Heavy infections of elms by Gnomonia ulmea is reported from Pennsylvania, which also reports defoliation of black walnut by the brown leaf spot caused by Marssonina juglandis. Although infections by Taphrina sp. occur in early spring, the Massachusetts Shade Tree Laboratories have continued to receive specimens throughout the summer, notably on red, black, and white oaks.

Other Foliage Diseases. Willow scab was severe in parts of Massachusetts. Maine reports willow scab as locally abundant in the southern part, especially on lower parts of trees. Occasionally powdery mildews have been locally abundant in scattered localities in the Northeast. Leaf blotch of buckeye (Guignardia aesculi) has been surprisingly light this year, although severe spot infections have been observed; as fall approaches and leaf fall becomes imminent, it seems that leaf blotch has become more common.

SHOOT BLIGHTS

Maine reports that Botrytis blight of hemlock is killing shoots of this species near Acton, and that the same fungus may be the cause of a shoot blight of white spruce in the Augusta and Boothbay areas. Pennsylvania reports new infections of Diplodia pinea on polesized Scotch and red pine at Hecla, and of several areas showing Diplodia dieback earlier in the season now appearing generally healthy.

RUSTS

White pine blister rust (Cronartium ribicola) is reported on dying small pines in the vicinity of Ligonier, Pa. New York reports that control work is practically complete for the 317,000 acres scheduled to be worked this year. West Virginia had an exceptionally heavy spore production of white pine blister rust this year. Abundant leaf spot infections by Gymnosporangium rust species occurs on their deciduous hosts, according to word from Maine. Red spruce needle rust, probably Chrysomyxa cassandrae, has been identified from Mt. Cardigan Reservation near Orange, New Hampshire.

CANKERS

As usual, cankers caused by Nectria galligena, or closely related species, have been reported from widely separated sources. Birch and other hardwoods are badly cankered in the Allegheny National Forest, near Warren, Pennsylvania. Nectria sp. was fruiting on dieback twigs of rose-of-Sharon submitted to the Massachusetts Shade Tree Laboratories. A high percentage of black birch is infected by N. galligena in northwestern Massachusetts. From the Hopkins Experimental Forest, Williamstown, Massachusetts, comes a report of beech scale, but N. coccinea var. faginata has not been found associated with it. Chestnut blight (Endothia parasitica) was observed in southern Maine and southwest Vermont on young chestnut sprouts. Stem cankers and wilted, blighted shoots were common on such sprouts. Black knot (Dibotryon morbosum) is common at higher elevations in West Virginia. Three cankers of oaks, mainly on the red oak series, but sometimes on white, were frequently observed in the coastal plain region of New Jersey, during recent work in that area. They were: (1) the elongated, depressed canker associated with the polypore, Polyporus hispidus. This canker was common, and during midsummer many fresh conks of P. hispidus were observed, but oftentimes nonfruiting cankers were noted. (2) The gnarly, swollen cankers caused by another polypore, Fomes everhartii, were very common; more so than at any other locality the writer has ever seen. Conks of the fungus were very abundant and as many as 5 or 6 conks occurred on some oaks. (3) In addition, Strumella canker (Strumella coryneoides) was common on oaks in this part of New Jersey. Here also, the shortleaf pines frequently were badly rust-cankered by Cronartium comptoniae, where "hot spots" of such cankered trees were found.

WILTS

Dutch elm disease (Ceratocystis ulmi). Of the wilts, Dutch elm disease has been very noticeable throughout the Northeast. New York reports it as very heavy. Maine reports double the number of towns where Dutch elm disease was found in 1958 over the number found during the period of 1952-1957. In Maine the disease has been found in all areas of the state except the far North, but it has been found in New Brunswick, Canada, in those latitudes.

Verticillium wilt (Verticillium albo-atrum) has been widely reported this year. Massachusetts reports isolating it from Japanese and other species of maple. New Jersey reports it as a continuing problem, necessitating the removal of many decrepit trees, because of hazards to pedestrians and vehicular traffic.

Oak wilt (Ceratocystis fagacearum) was found in two new West Virginia counties bringing the number up to 46. Over 1400 trees were processed by the deep dry-girdle method in 1958. The Annual Report, covering oak wilt activities in West Virginia will be out soon. Excluding the research area in Perry County, Pennsylvania, 335 oak wilt areas were located in 1958, 70 being re-treatments of previously found areas, but which had newly infected trees; 87 of the 335 areas were single tree infections. The disease was cultured from a dying large oak east of Ligonier, Pa. Dead oaks had been removed from this spot in previous years.

ROOT ROTS

Fomes annosus was found on pitch, Scotch, red and white pine in plantations south of Saratoga Springs, New York. In plantations in the southern New Jersey Coastal Plain area, the following hosts were found infected: Pinus rigida, P. echinata, P. resinosa, P. strobus, P. ponderosa, P. taeda, P. sylvestris, P. banksiana, European larch (Larix decidua), Pseudotsuga menziesii, Juniperus virginiana, and Picea abies. It is believed that some of these hosts are new records from New Jersey, and may be new records for some of the hosts from the Eastern part of the United States. West Virginia reports culturing F. annosus from dead and dying red cedars, in an area located in 1957.

Armillaria mellea was found on approximately 70 to 80 percent of dead, standing, poisoned hardwood trees, or stumps of such trees, in the vicinity of Cranberry Lake, New York. This observation was made during the 2nd year following poisoning operations, which involved beech, maple, and yellow birch. The fungus was at, or near, the ground line in the bark-cambial area but had not penetrated the underlying wood deeper than a fraction of an inch. It was identified by its characteristic rhizomorphs, mycelial fans, and by the fluorescence of the rot when examined in the dark. Massachusetts reports A. mellea from infected oak roots which had grown under marginal conditions for several years. Presumably drought triggered the final decline and death of such trees.

ROOTS

New Hampshire reports a very high incidence of Poria obliqua on yellow birch on the Hubbard Brook Research Forest. Fomes everhartii and Polyporus hispidus have already been mentioned under cankers; they are also responsible for heavy decay losses in the red and white oaks on the New Jersey Coastal Plain. Both occur here more commonly than in any other area the writer has seen. Polyporus obtusus also occurred commonly in this area but, for the most part, was found on small oaks of about 4 to 6 inches in diameter. Polyporus spraguei is another fungus commonly occurring in the coastal plain area of New Jersey.

MISCELLANEOUS AND UNEXPLAINED DISEASES

We shall try to keep this section brief. It should be borne in mind that sicklooking, dying, or dead trees, with which no insect or disease seems associated, constitute about 90 percent, or more, of our unexplained tree troubles. The cause is usually some combination of adverse environmental factors, although secondary insects and saprophytic or weak pathogenic fungi may be a part of the later stages of such complexes.

White pine needle blight is reported common in southern Maine, especially since the first of August. New Hampshire reports needle blight as very light this year. Maine also states that white pine decline, found locally around Wiscasset, is still unexplained although it is suspected that soil conditions may be involved. Dwarf mistletoe (Arceuthobium pusillum) is heavy and causing extensive injury to spruce on the coastal strip and islands from Brunswick-Ellsworth regions. Drought after-effects and mortality of several species of trees is reported from Massachusetts. West Virginia reports considerable variation among its scarlet, black, and white oaks affected in some 30 counties; Maryland tells of scarlet oaks near Towson with symptoms first noted 6 years ago, and for which no fungus has been isolated as their cause. Another report concerns eastern red, black, and scarlet oaks affected all over southern Maryland with dying limbs and top dieback, but southern red oak does not seem to be affected.

New Jersey cites defoliation and dying branches of sweetgums as a still unsolved problem, and from which no pathogen has been isolated --- drought is also mentioned as affecting New Jersey sweetgums. Although not usually included in the PEST REPORTER, a related report tells of oak dieback and kill on slopes of the George Washington National Forest involving 30 or 40 acres, and scattered dieback trees elsewhere in Virginia on both the George Washington and Jefferson National Forests. New York reports tips of red pines turning brown on pole-sized plantation trees as very noticeable in the Whetstone Gulf area. A probable allied symptom on hardwoods is the extensive leaf scorch, widely reported and thought to be a drought after-effect, in spite of good moisture supplies this year. Pennsylvania reports a Cytospora sp. cultured from willow twigs from Warren County; also, drought as a probable cause of scarlet oak mortality near Manheim, and of pine mortality near Kennet Square. Massachusetts reports death of planted Norway spruce due to planting too deep, where even the lower branches of the stock were buried.

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The following item may be of interest to readers of the REPORTER:

The Northeastern Forest Experiment Station has just published "A Survey of Forest Tree Diseases in the Northeast - 1957," by Robert A. Zabel, Savel B. Silverborg, and Marvin E. Fowler. This was issued as Station Paper No. 110. 1958.